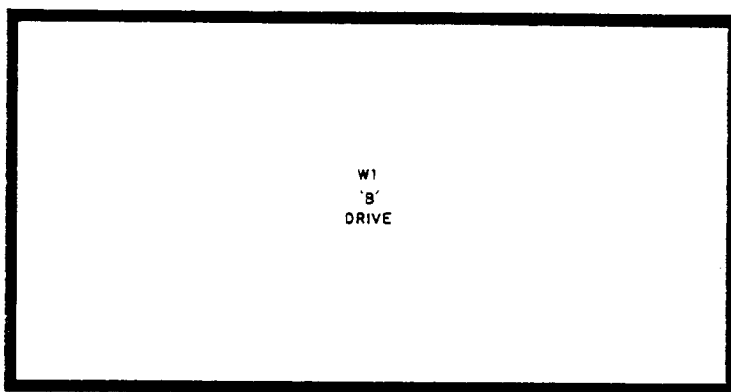


Torque-Hub® Final Drives

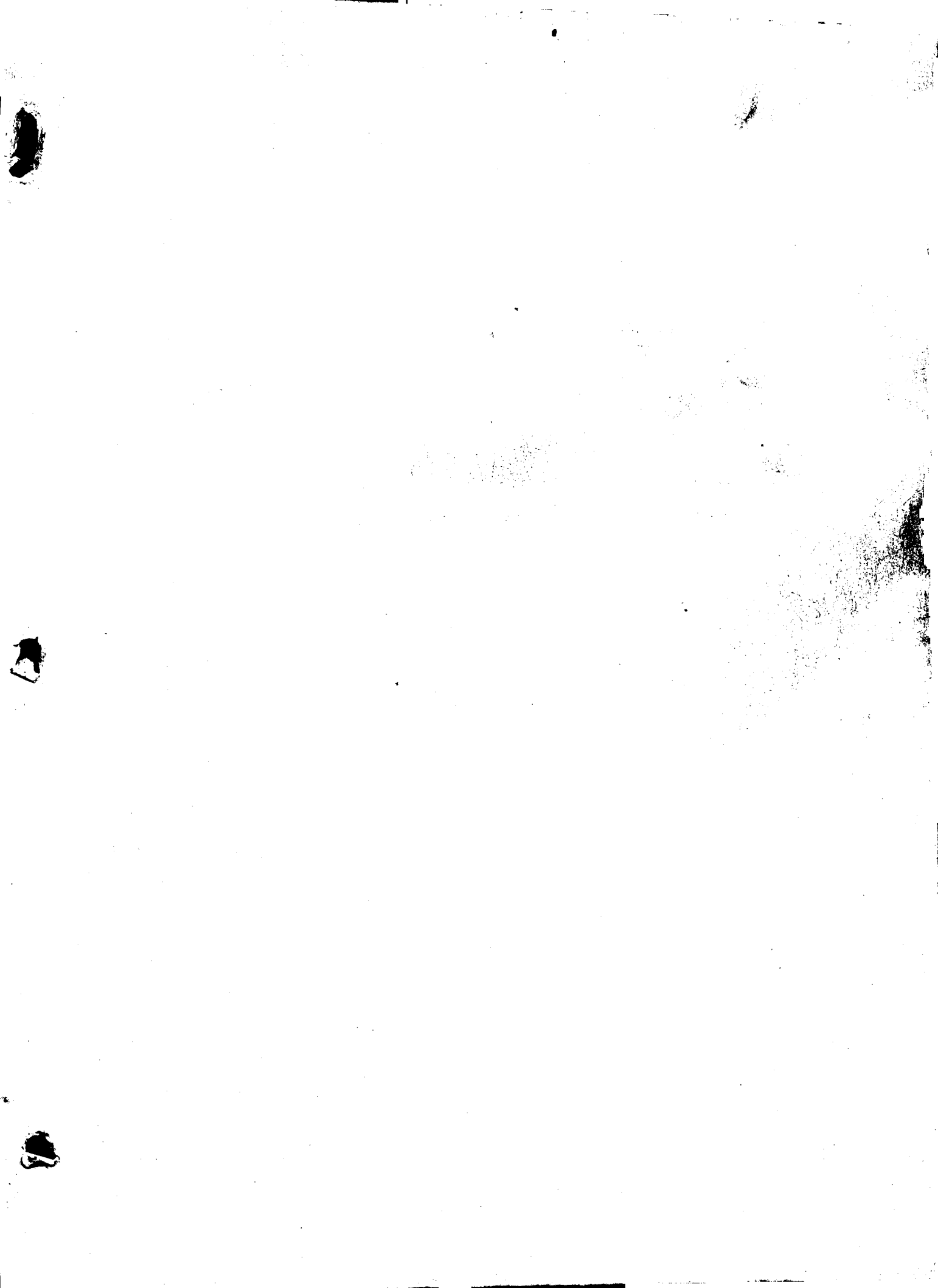
Service Manual



Fairfield Manufacturing Company, Inc.
South Concord Road, Lafayette, Indiana 47902, U.S.A. 317/474-3474

Fairfield

THE
DRIVE
PEOPLE



Introduction


This Service Manual is a step-by-step guide designed for the customer or shop mechanic who is servicing or repairing a particular model of Torque-Hub Final Drive. (The model covered by this copy of the Manual is specified on the Manual cover.)

Included are —

1. assembly and exploded view drawings
2. disassembly procedure
3. main assembly procedure (assuming all sub-assemblies to be intact)
4. sub-assembly procedures.

At the time of printing, this Manual was complete for the specific Torque-Hub model designated. However, Fairfield Manufacturing Co., Inc., reserves the right to update and improve its products at any time. All specifications and procedures are therefore subject to change without notice.

Safety

Standard safety practices should be followed during the disassembly and assembly procedures described. Safety glasses and safety shoes should be worn; heavy, heat resistant gloves should be used when heated components are handled. Be especially alert when you see a caution symbol () . This symbol indicates that a particular operation could cause personal injury if not performed properly or if certain safety procedures are not followed.

W1A-W1B

Disassembly Procedure

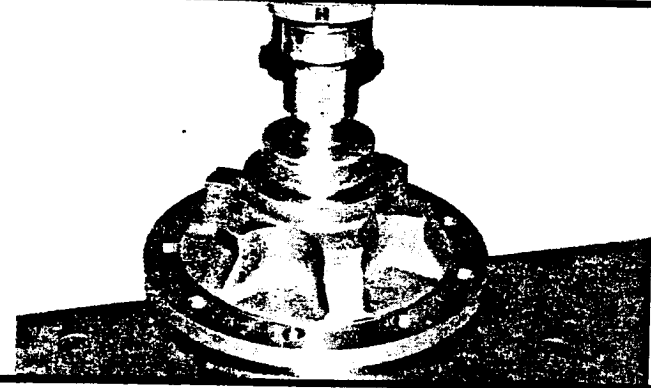
1. Loosen all 16 Cover Bolts and drain the oil from the unit.
2. Remove the 16 Cover Bolts and lift off the Cover Sub-Assembly. Discard the 'O' ring Seal from the Cover counterbore.
3. Lift out the Carrier Sub-Assembly and the top Thrust Washer. The Thrust Washer may stick inside the Cover.
4. Pry the Ring Gear loose and remove it. Discard the 'O' ring Seal from the Hub counterbore.
5. Remove the Input Shaft, Input Gear, and the Thrust Spacers that are on the Input Shaft.
6. Lift out the Internal Gear and Thrust Washer. The Thrust Washer may stick to the bottom of the Carrier.
7. Remove the Retaining Ring from the Spindle and discard; then lift the hub off the Spindle.
8. The inside Bearing Cone and the Bearing Shim can now be removed.
9. The Seal can be pried out of the Hub with a screw driver or pry bar. This will also allow the outside Bearing to be removed.

Note: If bearing replacement is necessary, the Bearing Cups can be removed with a "slide hammer puller" or driven out with a punch.

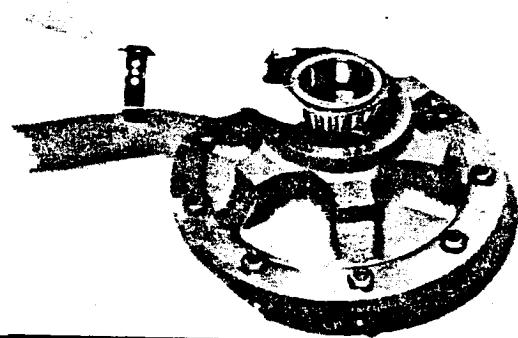
10. To remove the Cluster Gears from the Carrier, drive the anti-roll pin into the Planet Shaft of the Cluster Gear. After the Planet Shaft is removed the roll pin should be driven out of the Planet Shaft.

WARNING: When rebuilding the unit, the 'O' rings and Retaining Rings should always be replaced.

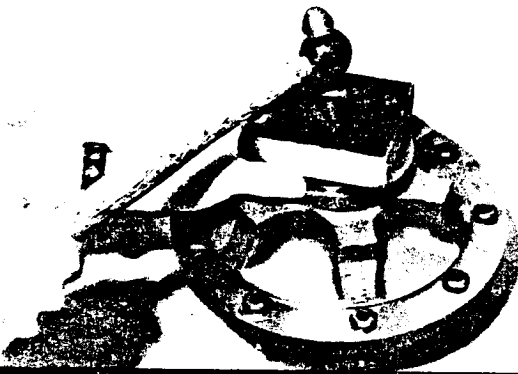
Main Assembly Procedure



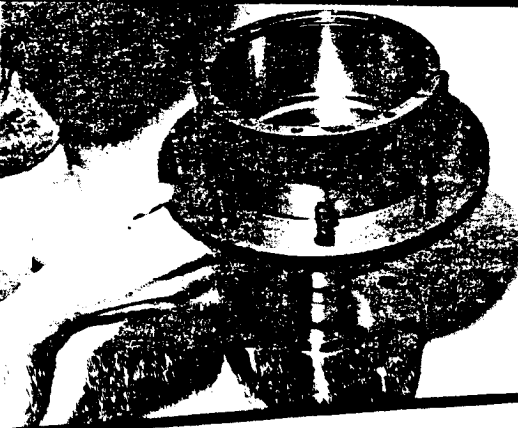
1. Using an arbor type press if available, press Bearing Cups with large inside diameters facing out, into Hub counterbores. Cup #JLM506810 will go into small end of Hub, and Cup #JM205110 will go into large end of Hub. If Studs are being used, they can be pressed in at this time. Solid support must be used in this operation.



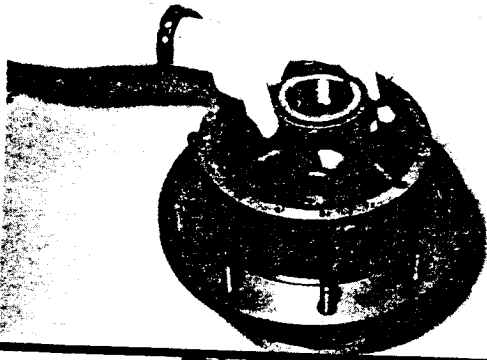
2. Place Bearing cone #JLM506849 into Bearing Cup in small end of Hub.



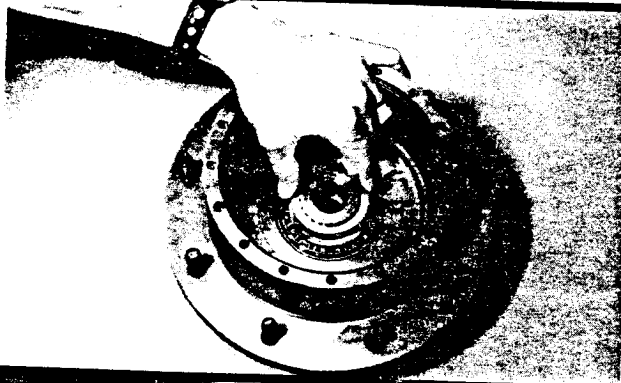
3. Press Seal into Hub counterbore with flat metal side facing in. Use a flat object to assure that Seal is pressed evenly and is flush with Hub face.



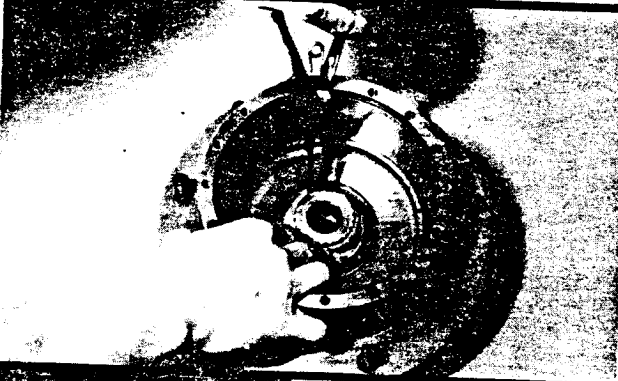
4. Lower Hub onto Spindle with large open end up.



5. Place Bearing Cone #JM205149 over end of Spindle and into Bearing cup.

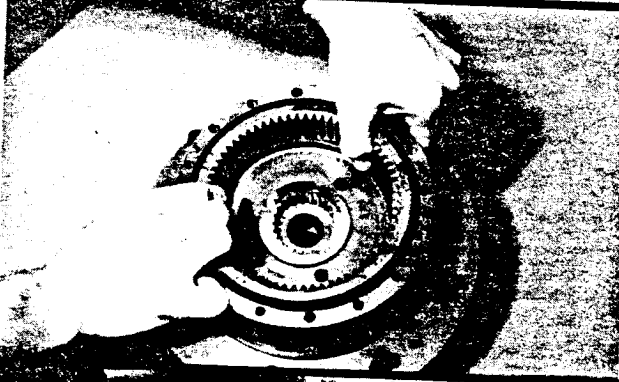


6. Place Bearing Shim over end of Spindle and against Bearing Cone.

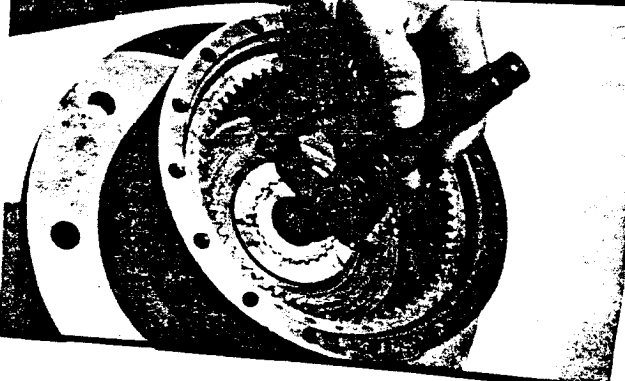


7. Secure Retaining Ring completely into Spindle groove and against Bearing Shim. Be sure that Retaining Ring is entirely in groove.

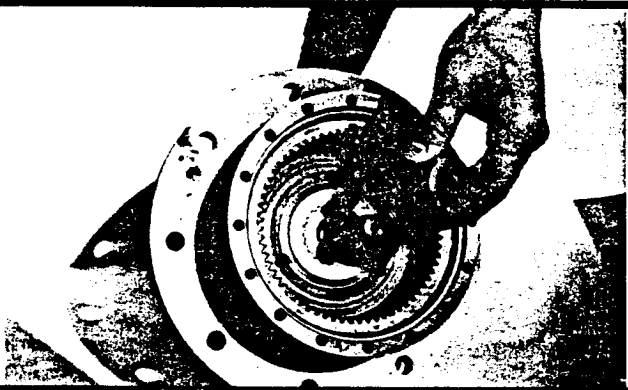
⚠ Eye protection should be worn during Retaining Ring installation.



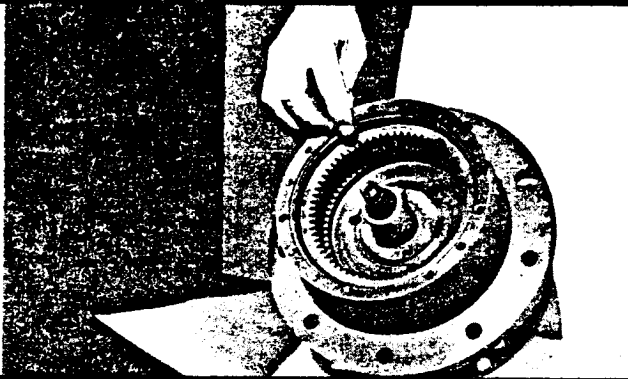
8. Place Internal Gear onto end of Spindle.



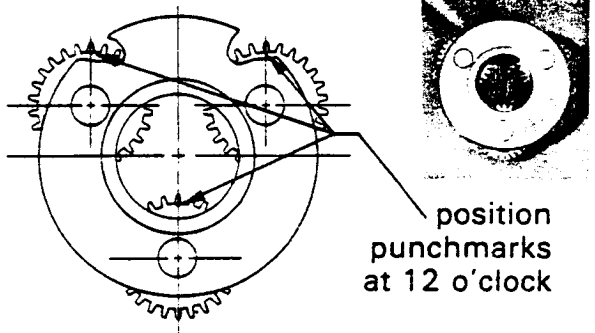
9. Place Input Shaft Assembly into Spindle bore with unsplined end facing out.



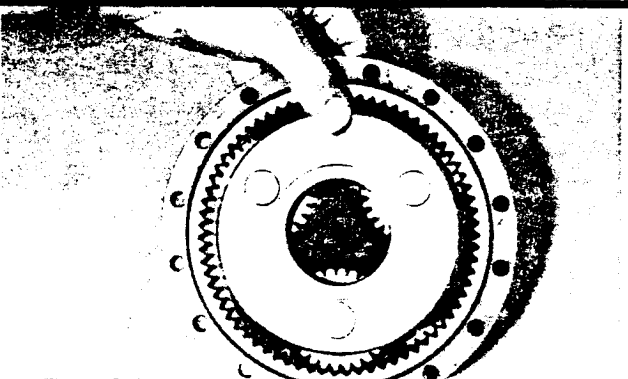
10. Place narrow Thrust Spacer over Input Shaft with counterbore side facing Spindle.



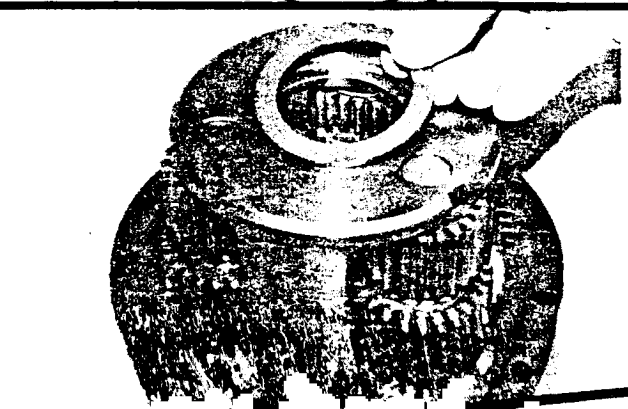
11. Place 'O' Ring into Hub counterbore. Use petroleum jelly or grease to hold 'O' Ring in place. Slight stretching of the 'O' Ring may be necessary to insure proper seating.



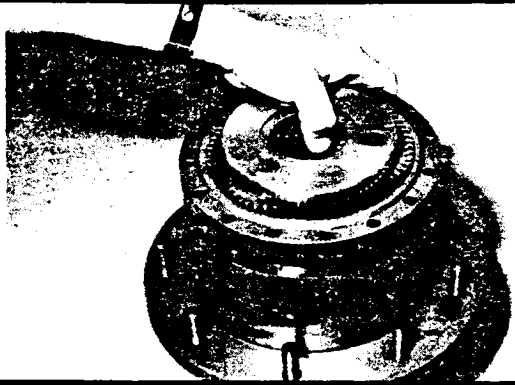
12. Place Carrier Assembly on a flat surface with the large gears up and positioned as shown. Find the punch marked tooth on each large gear and locate at 12 o'clock (straight-up) from each planet pin. Marked tooth will be located just under the Carrier on upper two gears.



13. With shoulder side of Ring Gear facing down, place Ring Gear over (into mesh with) large gears. Be sure that punch marks remain in correct location during Ring Gear installation.

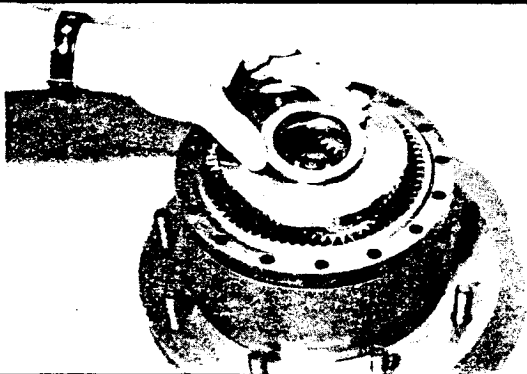


14. Turn over Carrier Assembly and Ring Gear while keeping gears in mesh. Place Thrust Washer into Carrier counterbore. Use petroleum jelly or grease to hold washer in place.



15. While holding Ring Gear, Input Gear and Cluster Gears in mesh, place small side of Cluster Gears into mesh with the Internal Gear. On the Ring Gear locate the hole marked "X" over one of the counterbored holes in Hub. Mark these holes on outside diameter for later use.

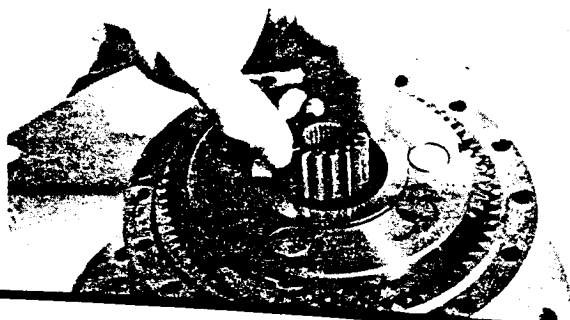
Note: If gears do not mesh easily or Carrier Assembly does not rotate freely, then remove the Carrier and Ring Gear and check the Cluster Gear timing.

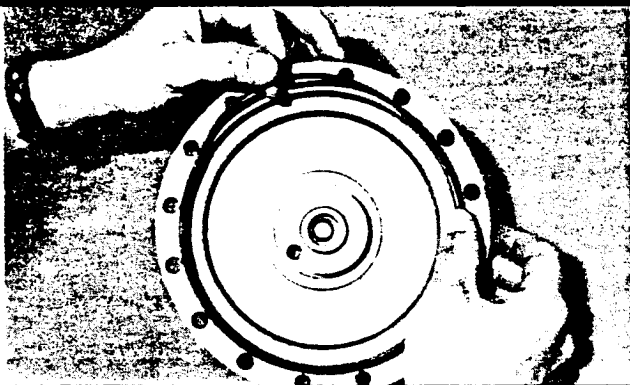


16. Place Thrust Washer into Carrier counterbore.

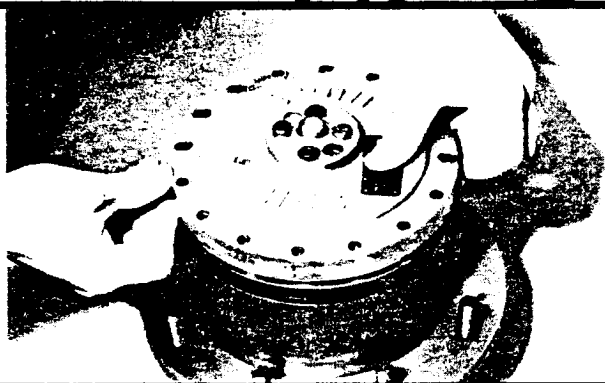


17. The Input Gear is now installed into the carrier meshing with the large diameter cluster gear. The counterbore in the bore of the Input Gear must be to the inside of this assembly.

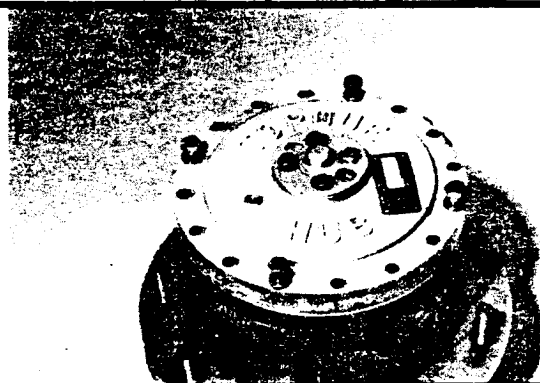




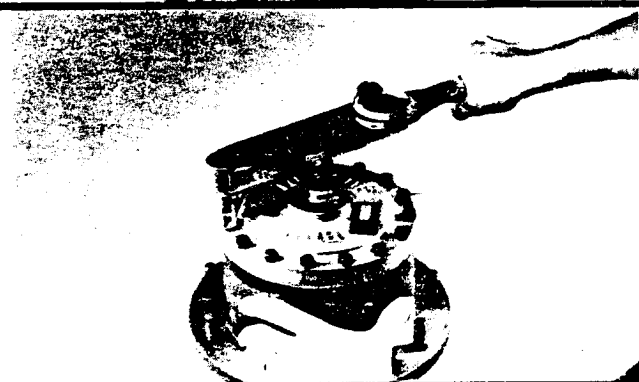
19. Place 'O' Ring into Cover Assembly counterbore. Use petroleum jelly or grease to hold 'O' Ring in place.



20. Place Cover Assembly over Ring Gear with oil level check plug in Cover located approximately 90° from oil fill plug in Hub.



21. Locate four Shoulder Bolts with flat washers, 90° apart into counterbored holes in Hub marked in step 16. Torque Shoulder Bolts to 23-27 ft. lbs.



22. Use standard grade 8-5/16-18x2 1/4 bolts with flat washers in remaining holes. Torque to 23-27 ft. lbs.



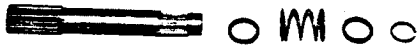
23. Place Coupling into Spindle and onto Input Shaft.

This completes the Torque-Hub Assembly. The unit must be filled one-half full of EP90 lubricant before operation.

Assembly Procedure For Sub-Assemblies

Input Shaft Sub-Assembly

1. Place Washer, Spring and Washer, in that order, onto Input Shaft.



-
2. Install Retaining Ring into Input Shaft groove to secure Spacers and Spring to shaft.



- ⚠ Eye protection should be worn during Retaining Ring installation.
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Carrier Sub-Assembly

1. Apply a coat of grease or petroleum jelly to Cluster Gear bore.

2. Place sixteen Needle Rollers into Cluster Gear bore.

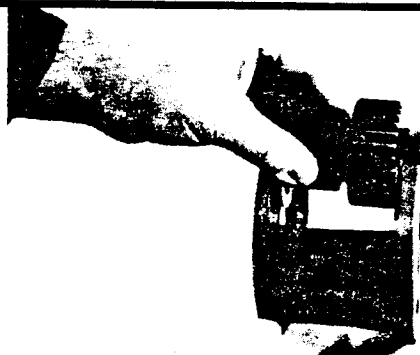
3. Place Spacer washer into opposite side of Cluster Gear and against Needle Rollers.

4. Place second set of sixteen Needle Rollers into Cluster Gear.

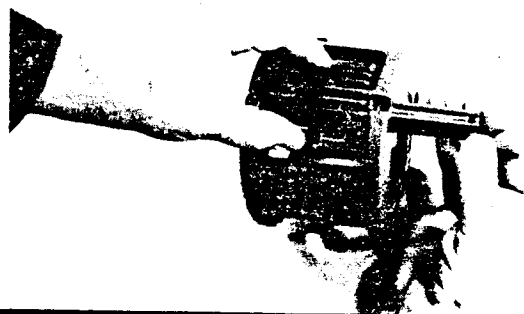


5. Apply grease or petroleum jelly to the tang side of two Thrust Washers. Place Thrust Washers against bosses in Carrier with washer tang fitting into slot in Carrier outside diameter.

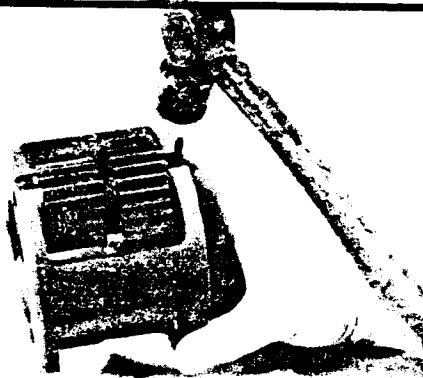
Note: Some old style Carriers will not have slots and tangs should be located inside boss relief.



6. While keeping Thrust Washers in place, slide Cluster Gear into Carrier with the larger gear on the side with the small pin hole.



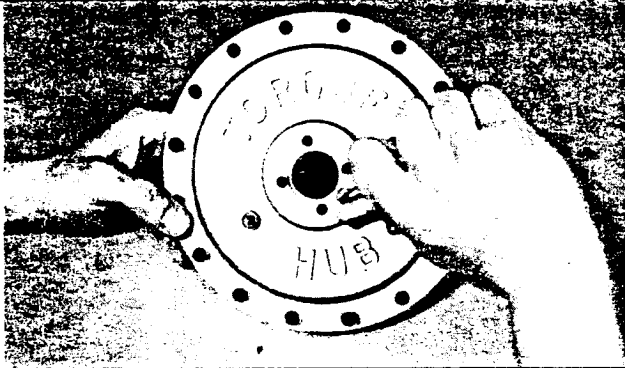
7. Line up Cluster Gear and thrust Washers with hole in Carrier and slide Planet Shaft through. Line up chamfered side of hole in Planet Shaft with pin hole in Carrier.



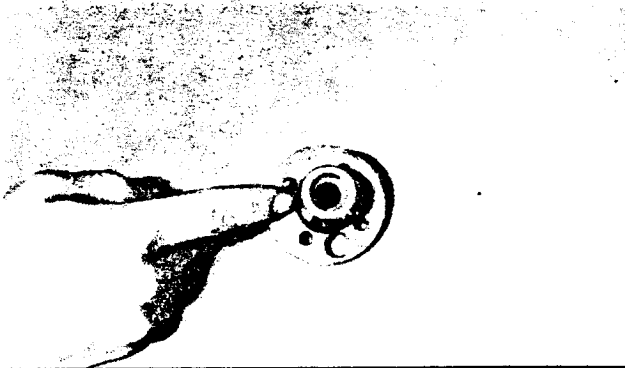
8. Drive Anti-Roll Pin flush into Carrier hole, thereby locking Planet Shaft into place.

Repeat these steps for remaining two Cluster Gears to complete Carrier Sub Assembly.

Cover Sub-Assembly



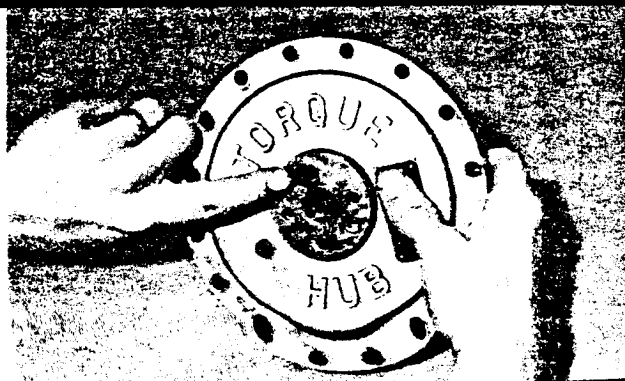
1. Screw Pipe Plug into Cover.



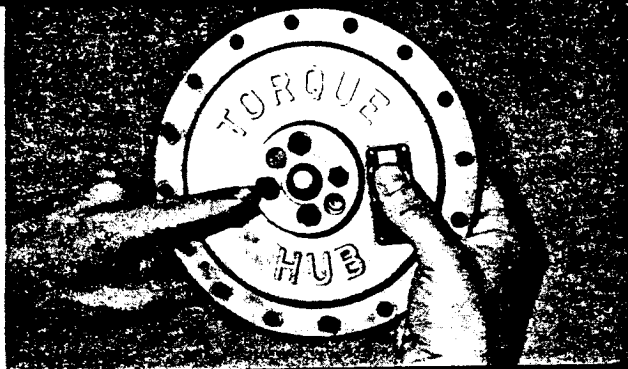
2. Slip 'O' Ring over Cover Cap and against face.



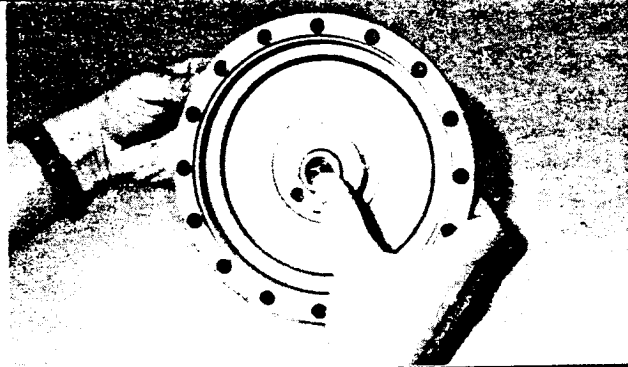
3. Place 'O' Ring into Cover Cap internal groove. The Disconnect Rod may be used to push 'O' Ring into groove.



4. Place Cover Cap into Cover with large hole located over Pipe Plug. Secure Cover Cap to Cover with two $\frac{1}{4}$ -20x $\frac{3}{4}$ bolts. Torque bolts to 70-80 in. lbs.

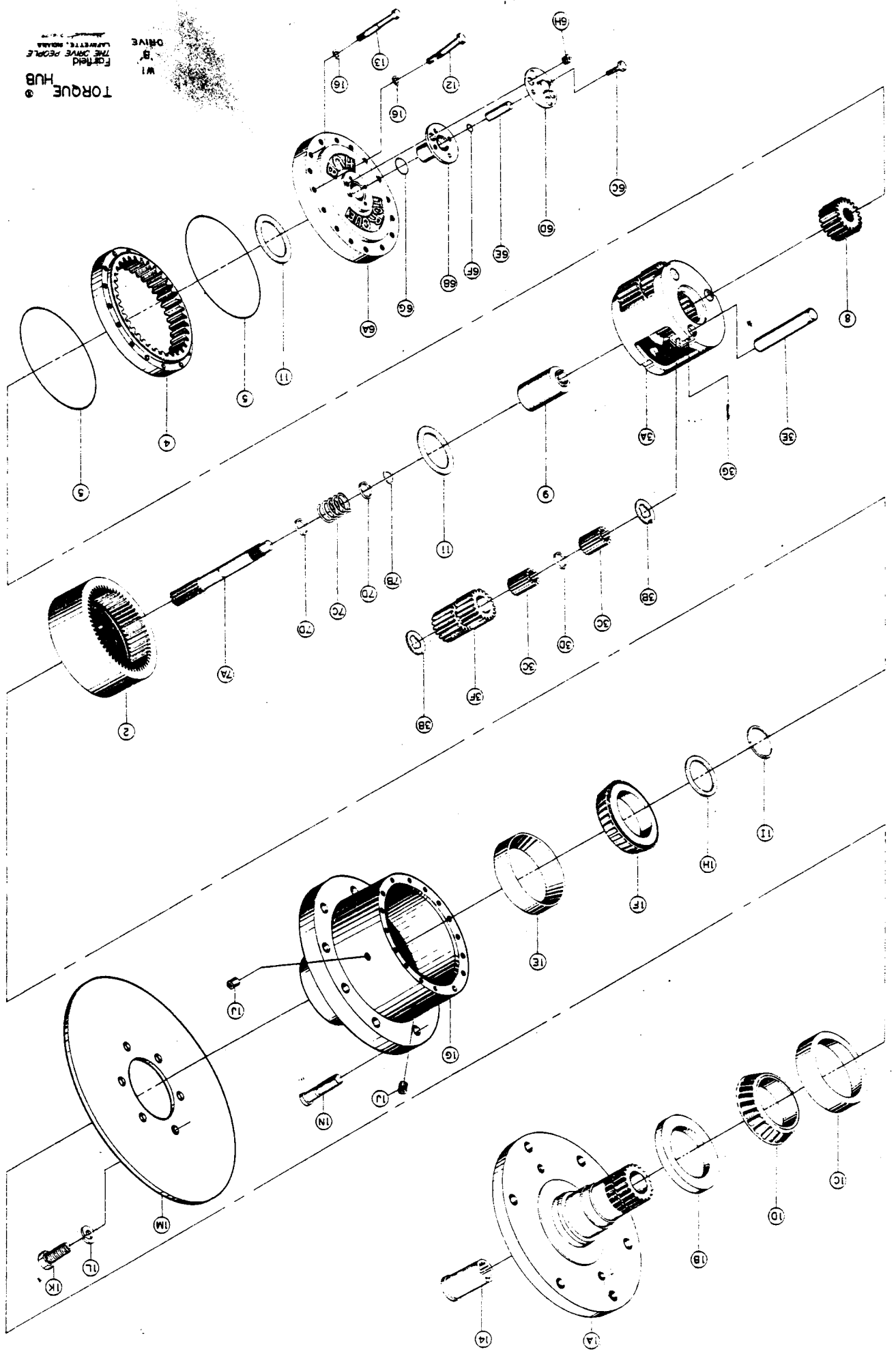


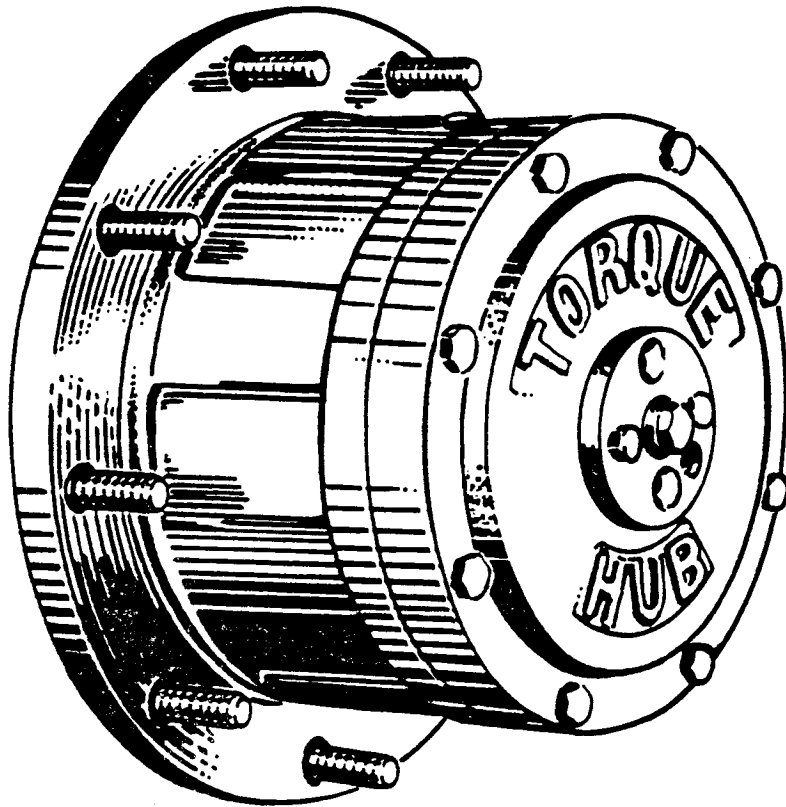
5. Place Disconnect Cap over Cover Cap with nipple facing out. Secure Disconnect Cap to Cover with two $\frac{1}{4}$ -20x $\frac{3}{4}$ bolts. Torque bolts 70-80 in. lbs.



6. Turn Cover over and push Disconnect Rod into Cover Cap. Rod will be held in place by friction from the 'O' Ring.

TORQUE HUB
W1
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FOR MATERIAL HANDLING EQUIPMENT, FARM MACHINERY, ROAD EQUIPMENT, MINING MACHINERY, ETC.

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